Commonwealth of Kentucky
Transportation Cabinet
Frankfort, Kentucky 40622

Maxwell C. Bailey
Secretary of Transportation

Ernie Fletcher
Governor

January 13, 2004

PCN 03-0787
CHANGE # 1

Subject: McCracken County, FD04 073 0045 007-009
Letting December 12, 2003 Extended to January 23, 2004

Listed below are the enclosed changes on the subject project:

(1) Revised - Detail Sheets 2 Pages
(2) Revised - Special Note for PCC Pavement Inlay 4 Pages
(3) Revised - Traffic Control Plan 4 Pages
(4) Revised - Special Note Asphalt Milling and Texturing and Placing PCC Inlay and Liquidated Damages 1 Page
(5) Deleted - Special Notes for Traffic Inductance Loops 7 Pages and REPLACE with Signal Bid Item Notes and Detail 4 Pages
(6) Revised - Bid Items

If you obtained bid items from our Website, it is ***imperative*** that you download a new set of bid items before submitting them for bidding.

Your bid, to be considered, must be based upon the above-mentioned changes, and these changes are to be made a part of the bid proposal, which you submit to the Kentucky Department of Highways.

Specimen proposals may not be used for bidding purposes.

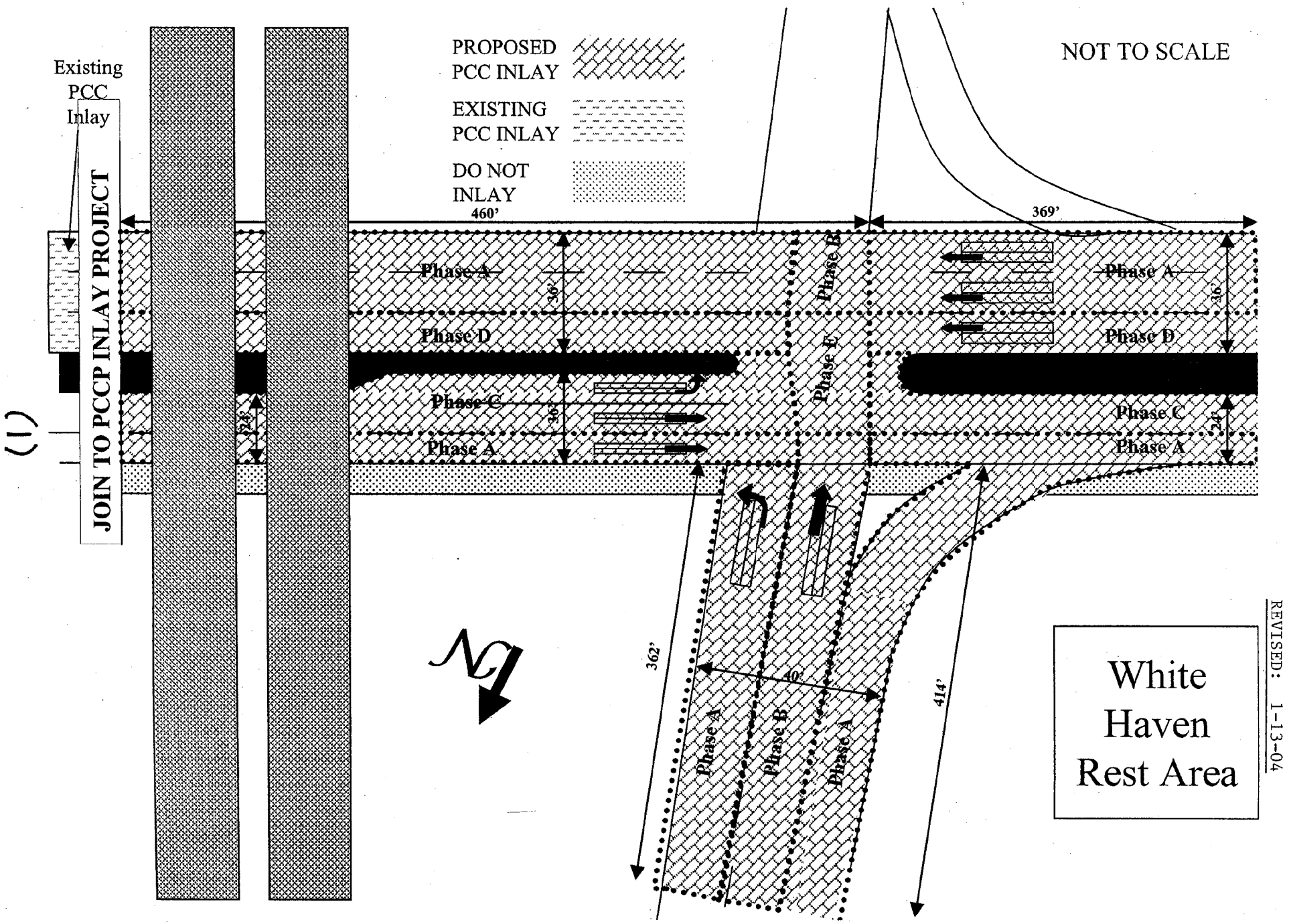
If you have any questions, please contact us at (502) 564-3500.

Sincerely,

Rick Stansel

Rick Stansel
Director
Division of Contract Procurement

Enclosures
RS:bc


PROPOSED PCC INLAY
EXISTING PCC INLAY
DO NOT INLAY
NOT TO SCALE
Existing PCC Inlay
JOIN TO PCCP INLAY PROJECT
(I)
460'
369'
Phase A
Phase D
Phase C
Phase A
Phase B
Phase E
Phase A
Phase D
Phase C
Phase A
36'
36'
36'
24'
24'
362'
40'
414'
Phase A
Phase B
Phase A
N
White Haven Rest Area
REVISED: 1-13-04

REVISED: 1-13-04

(2)

REVISED: 1-13-04

SPECIAL NOTES FOR PCC PAVEMENT INLAY
MCCRACKEN COUNTY
F004 073-0045-007-009

I. DESCRIPTION

Except as specified in these notes, perform all work according to the Department's 2000 Standard Specifications, applicable Special Provisions and Special Notes, Standard Drawings and Sepia Drawings, and the drawings elsewhere in this proposal. Article references are to the Standard Specifications.

Furnish all materials, labor, and equipment for the following work: (1) Asphalt Milling and Texturing of existing pavement; (2) Installing traffic signal loop detectors; (3) Placing 4" PCC Pavement Inlay; (4) Maintaining and controlling traffic; and (5) All other work specified as part of this contract.

II. MATERIALS

The Department will sample and test all materials according to Department's Sampling Manual. Make materials available for sampling a sufficient time in advance of the use of the materials to allow for the necessary time for testing, unless otherwise specified in these notes.

A. Maintain and Control Traffic. See Traffic Control Plan.

B. 4" PCC Pavement/24. Use PCC mixtures capable of attaining 3500 psi compressive strength and being opened to traffic within 24 hours. Maximum aggregate size shall be 1 inch. Recommended slump for PCC Pavement/24 is 3 inches. At Contractor's option with no additional cost to the Department, other high early strength rapid setting concrete mixtures approved by the Engineer may be furnished in order to comply with the time restrictions in the Traffic Control Plan. Use curing compound compatible with the thermoplastic pavement markings to be placed by the Department. Except as provided herein, 4" PCC Pavement/24 shall be according to the Special Note for 4-Inch PCC Pavement Inlay and Section 502.

C. Synthetic Fibers. Use graded, fibrillated, polypropylene fibers. Add Synthetic Fibers at a dosage rate of 3 pounds per cubic yard to the PCC Pavement/24 mixture at the plant as recommended by the Manufacturer.

D. Traffic Signal Loop Detectors. See Signal Notes on drawings.

III. CONSTRUCTION METHODS

A. Maintain and Control Traffic. See Traffic Control Plan.

B. Asphalt Milling and Texturing. Mill existing asphalt pavement to a nominal depth of 4", except construct a transition section to allow for a 4' panel with a nominal depth of 6 inches for the exit/entrance panels and any transition longitudinal panels receiving traffic, and an 8' transition (2- 4' panels) for transitioning from the 4-inch to 6-inch depth. Dimensions and location shown on the drawings are approximate only; the Engineer will determine the exact dimensions at the time of construction. Wedge transitions between milled and unmilled areas which traffic may cross with asphalt mixtures for leveling and wedging. Remove the wedge prior to placement of the PCC Inlay. See Special Note For Asphalt Milling And Texturing And Placing PCC Inlay And Liquidated Damages for additional requirements and restrictions.

C. Traffic Signal Loop Detectors. After milling and prior to placing the PCC Inlay, install the Traffic Signal Loop Detectors as shown on the drawings through the backface of the curb. Saw cutting through the curb in lieu of drilling will be allowed. The Department will connect the loop wires to the junction box.

D. 4" PCC Pavement Inlay. Dimensions and location shown on the drawings are approximate only; the Engineer will determine the exact dimensions at the time of construction. Install new traffic signal detector loops in the milled surface prior to placement of the PCC inlay. Prior to placement of PCC Pavement/24, remove asphalt wedges and saw cut asphalt pavement to provide a neat clean edge. The nominal depth of the PCC Pavement shall be 4 inches; except construct a transition section to provide a panel with a nominal depth of 6 inches for the exit/entrance panels and any transition longitudinal panels receiving traffic. Allow a minimum of 8 feet for transitioning from the 4-inch to 6-inch depth. Transition the finished grade of the PCC Pavement to match the adjacent pavement that is to remain in place. Do not place the PCC inlay when the temperature of either the milled surface or the ambient air temperature exceeds 89°F. Except as provided herein, construct the inlay according to Special Note for 4-Inch PCC Pavement Inlay.

E. Joint Construction. Saw longitudinal joints to conform to the lane line configurations.

F. Restoration. Restore any roadway features disturbed by the work or the Contractor's operations in like kind materials and design as directed by the Engineer.

G. On-Site Inspection. Make a thorough inspection of the site prior to submitting bid and thoroughly evaluate existing conditions so that the work can be expeditiously performed after a contract is awarded. The Department will consider submission of bid as certification of this inspection having been made. Any claims resulting from site conditions will not be honored by the Department.

H. Property Damage. Be responsible for all damage to public and/or private property resulting from the work.

I. Utility Clearance. It is not anticipated that utility facilities will need to be relocated and/or adjusted; however, in the event that it is discovered that the work does require that utilities be relocated and/or adjusted, the utility companies will work concurrently with the Contractor while relocating their facilities, and working days will not be charged for those days on which work on the controlling item is delayed, as provided in the Specifications. If the total delay exceeds ten working days, an extension of the specified completion date will be negotiated with the Contractor for delay to the Contractor's work.

IV. METHOD OF MEASUREMENT

A. Maintain and Control Traffic. See Traffic Control Plan.

B. 4" PCC Pavement. See Special Note for 4-Inch PCC Pavement Inlay.

C. Joint Sealing. The Department will not measure sawing for payment, but shall be incidental to the 4" PCC Pavement/24.

D. Remove Type V Pavement Markers. Removing Type V Pavement Markers will not be measured for payment, but shall be incidental to Asphalt Milling and Texturing.

E. Leveling and Wedging. Asphalt mixtures for leveling and wedging will not be measured for payment, but shall be incidental to Asphalt Milling and Texturing.

F. Restoration. Restoration of shoulders or other roadway features disturbed by the work, will not be measured for payment but shall be incidental to the 4" PCC Pavement/24.

IV. BASIS OF PAYMENT

No direct payment will be made other than for the bid items listed. All other items required to complete the construction shall be incidental to the bid items listed.

A. Maintain and Control Traffic. See Traffic Control Plan.

B. 4" PCC Pavement/24. Payment at the contract unit price per square yard shall be full compensation for the addition of Synthetic Fibers to the 4" PCC Pavement/24 mixture at the plant as recommended by the Manufacturer, constructing the 4" PCC inlay, sawing, and restoration.

C. Asphalt Milling and Texturing. Payment at the contract unit price per ton shall be full compensation for removing raised pavement markers, milling and texturing the existing pavement, placing asphalt wedges to maintain traffic, and delivering the cuttings to the Hardin County Maintenance Facility.

TRAFFIC CONTROL PLAN
F004 073-0045-007-009

Except as provided herein, maintain traffic in accordance with the 2000 Standard Specifications and the Standard Drawings, current editions. Except for the roadway and traffic control bid items listed, all items of work necessary to maintain and control traffic will be paid at the lump sum bid price to "Maintain and Control Traffic".

Contrary to Section 106.01, traffic control devices used on this project may be new, or used in like new condition, at the beginning of the work and maintained in like new condition until completion of the work.

PROJECT PHASING & CONSTRUCTION PROCEDURES

No lane closures will be allowed on the following days and hours:

7:00 a.m. – 8:00 p.m.	Monday through Friday
April 9 – 11, 2004	Easter Weekend
April 21 – April 24, 2004	American Quilter's Society Quilt Show
May 28 – 31, 2004	Memorial Day Weekend
July 2 – 5, 2004	Independence Day Weekend

At the discretion of the Engineer, additional days and hours may be specified when lane closures will not be allowed. Maintain a minimum of one traffic lane in each direction at all times during construction. The clear lane width shall be 11 feet; however, make accommodations to allow the passage of a vehicle up to 16 feet in width. If traffic should be stopped due to construction operations, and a school bus on an official run arrives on the scene, make provisions for the passage of the bus as quickly as possible.

Install traffic signal loop detectors after milling and prior to placing the PCC Inlay.

LANE and SHOULDER CLOSURES

During construction of this project, close one lane, in the direction of work, using cones, barricades, or drums with flashing arrows in accordance with the Standard Drawings and these notes. Cones will not be allowed for lane or shoulder closures when difference in elevation between lanes or pavement/shoulder edge drop off is 4" or greater in depth. The lengths of lane closures shall be only that needed for actual operations and shall be left in place only during working hours or the minimum time required for PCC pavement curing.

SIGNS

Contrary to Section 112.04.02 and 112.04.03, Low Shoulder signs will not be measured for payment, but will be incidental to Maintain and Control Traffic. Contrary to section 112.04.02, only long term signs (signs intended to be continuously in place for more than 3 days) will be measured for payment; short term signs (signs intended to be left in place for 3 days or less) will not be measured for payment but will be incidental to Maintain and Control Traffic. Individual signs will be measured only once for payment, regardless of how many times they are set, reset, removed, and relocated during the duration of the project. Replacements for damaged signs or signs directed to be replaced by the Engineer due to poor legibility or reflectivity will not be measured for payment.

BARRICADES

Barricades used in lieu of barrels and cones for channelization or delineation will be incidental to Maintain and Control Traffic according to Section 112.04.01.

Barricades used to protect pavement removal areas will be bid as each according to Section 112.04.04. Individual barricades will be measured only once for payment, regardless of how many times they are set, reset, removed, and relocated during the duration of the project. Replacements for damaged barricades or barricades directed to be replaced by the Engineer due to poor legibility or reflectivity will not be measured for payment.

VARIABLE MESSAGE SIGNS

If deemed necessary by the Engineer, variable message signs will be installed, operated and maintained by the Department.

TRAFFIC COORDINATOR

Designate an employee to be traffic coordinator. In addition to the requirements of Section 112.03.10, during any period when a lane or shoulder closure is in place, the Traffic Coordinator shall arrange for personnel to be present on the project at all times to inspect the traffic control and to maintain the signing and devices. The project personnel shall have access on the project to a radio or telephone to be used in case of emergencies or accidents.

PAVEMENT STRIPING

Temporary and permanent pavement striping shall be in accordance with Section 112, except that:

1. Permanent or temporary striping shall be in place prior to opening a lane to traffic; and
2. Edge lines will be required for temporary striping; and
3. Permanent striping shall be 4" Type I Durable Striping Tape.

The Department will place stop bars, cross walks, and turn arrows. Notify the Engineer 7 calendar days prior to placing the PCC Inlay. The Engineer will coordinate the Department's operations with the Contractor's work.

TRAFFIC SIGNALS

During construction, temporarily relocate and/or cover existing signal heads according to Section 112.03.13 as required by the traffic control scheme in use. Temporary relocation of each signal head will only be measured once for payment regardless of the number of times the signal head is relocated.

Prior to milling, turn off the traffic signal detection devices and adjust signal timing. Install new Traffic Signal Detector Loops after milling and prior to placement of the PCC Inlay. After placing the PCC Inlay, readjust the signal timing. Obtain the Engineer's prior approval for signal timing for each phase of the work.

PAVEMENT EDGE DROP-OFFS

A pavement edge between opposing directions of traffic or lanes that traffic is expected to cross in a lane change situation shall not have an elevation difference greater than 1½ inches. Warning signs (MUTCD W8-11 or W8-9A) shall be placed in advance of and throughout the drop-off area. Dual posting on both sides of the traveled way shall be required. All transverse transitions between milled and unmillilled areas which traffic may cross shall be wedged with asphalt mixture for leveling and wedging. The wedges shall be removed prior to placement of the PCC inlay.

Pavement edges that traffic is not expected to cross, except accidentally, shall be treated as follows:

Less than 2 inches – No protection required. Place Low Shoulder Signs in advance of the drop-off.

2 inches to 4 inches – Place plastic drums, vertical panels, or barricades every 50 feet. Cones may be used in place of plastic drums, panels, and barricades during daylight working hours. If traffic is being maintained less than 10 feet from the drop-off, wedge with

asphalt mixtures for leveling and wedging with a 1:1 or flatter slope in daylight hours, or 3:1 or flatter slope during nighttime hours, when work is not active in the drop-off area.

4 inches or greater – Protect with a lane or shoulder closure using drums or barricades; cones will not be allowed for lane or shoulder closures for drop-offs 4 inches or greater. Drum or barricade spacing shall not exceed 25 feet. Place a Type III Barricade facing oncoming traffic at the drop off until PCC Inlay is constructed in excavated area. If traffic is being maintained less than 10 feet from the drop-off, wedge with asphalt mixtures for leveling and wedging with a 1:1 or flatter slope in daylight hours, or 3:1 or flatter slope during nighttime hours, when work is not active in the drop-off area.

REVISED: 1-13-04

SPECIAL NOTE FOR ASPHALT MILLING AND TEXTURING AND PLACING PCC INLAY AND LIQUIDATED DAMAGES

F004 073-0045-007-009

Contrary to Section 408 of the 2000 Standard Specifications, the material obtained from the milling operations shall become the property of the Department. Deliver this material to the State Maintenance facility in McCracken County.

Begin PCC Inlay operations immediately after commencement of the asphalt milling operation. Additional asphalt milling will be allowed in areas necessary to complete installation of Traffic Signal Loop Detectors. Mill, install Traffic Signal Loop Detectors, and place the proposed phase of PCC Inlay, and temporary striping and open all lanes to traffic for the current phase of construction in one weekend period between 8:00 p.m. Friday and 7:00 a.m. Monday. If proposed phase of inlay operations are not completed within this time period, additional liquidated damages in the amount of $1,000 per day will be assessed for each day, or part of a day, the PCC Inlay and temporary striping remains uncompleted after 7:00 a.m. Monday. Permanent striping, and Type V Pavement Markers may be constructed during allowable hours after the PCC Inlay is initially reopened to traffic.

Additional liquidated damages in the amount of $1,000 per day will be assessed for each day, or part of a day, a lane closure remains in place during prohibited periods specified in the Traffic Control Plan, excluding delays caused by inclement weather. If work is delayed by inclement weather, the work required to allow the lane closure to be removed shall be resumed immediately as soon as weather permits.

All liquidated damages will be applied accumulatively.

All other applicable portions of Section 108 apply.

BID ITEM NOTES

The Standard Specifications for Road and Bridge Construction, 2000 edition, and other special notes and specifications will apply on this project.

Conduit shall include furnishing and installing specified conduit in accordance with specifications. This item includes conduit fittings, expansion joints, clamps, and weatherheads.

Junction box shall include furnishing and installing specified junction box in accordance with the specifications. This item includes concrete (if required), #57 aggregate, conduit fittings and backfilling and restoration of disturbed areas to the satisfaction of the resident engineer.

Trenching and backfilling shall include excavation, backfilling, and the restoration of disturbed areas to original condition. Incidental to this item shall be furnishing and installing underground utility warning tape (if required).

Wire or cable shall include furnishing and installing specified wire or cable within conduit, saw slot, or overhead as indicated on the detail sheets. Incidental to this item shall be the furnishing and installing of splice boots, cable rings or other hardware required for installing cable. The contractor shall install all cable or wire runs splice-free from the controller to each device the cable or wire is feeding. Exceptions to this must be approved by the engineer or as specified on the plans.

Loop saw slot and fill shall include sawing, cleaning and filling induction loop saw slot with loop sealant material or suitable fill to keep preformed loop in place before final paving.

Preformed loop shall include furnishing and installing specified preformed loop in accordance with the specifications.

COUNTY OF	ITEM NO.	SHEET NO.
McCRACKEN		T-1

Contractor shall contact all utility companies and the District Utility Agent before any holes are dug or poles are set to insure proper clearance and shielding from existing or proposed utility lines.

Contractor shall label all loop ends and cables inside the cabinet as designated on the plans. Payment for this shall be incidental to the cost of the project.

DATE

DATE

APPROVED BY

SIGNAL BID ITEMS

SPECIAL NOTES FOR

TRAFFIC INDUCTANCE LOOPS

(1)

COUNTY OF	ITEM NO.	SHEET NO.
McCRACKEN	72	

DESCRIPTION

THIS WORK SHALL CONSIST OF FURNISHING, INSTALLING AND CONNECTING COMPLETE TRAFFIC SIGNAL INSTALLATION(S), WITH ACCESSORIES AND PLACING IN SATISFACTORY CONDITION. THE WORK SHALL BE PERFORMED IN ACCORDANCE WITH:

1. APPLICABLE DRAWINGS AND PLANS
2. KENTUCKY DEPARTMENT OF HIGHWAYS STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION
3. NATIONAL ELECTRICAL CODE, LATEST ISSUE
4. MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES
5. STANDARDS OF THE UTILITY COMPANY SERVING THE INSTALLATION

THE PLANS INDICATE THE EXTENT AND GENERAL ARRANGEMENT OF THE SIGNAL INSTALLATION AND ARE FOR GENERAL GUIDANCE. ANY COMMISSION OR OMISSION SHOWN OR IMPLIED SHALL NOT BE CAUSE FOR DEVIATION FROM THE INTENT OF THE PLANS AND SPECIFICATIONS. IF ANY MODIFICATIONS OF THE PLANS OR SPECIFICATIONS ARE DEEMED NECESSARY BY THE CONTRACTOR, DETAILS OF SUCH MODIFICATIONS AND THE REASONS, THEREFORE, SHALL BE SUBMITTED IN WRITING TO THE ENGINEER FOR WRITTEN APPROVAL PRIOR TO BEGINNING SUCH MODIFIED WORK.

THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR SURVEYING THE LOCATION AND ESTABLISHING THE ELEVATION FOR EACH CONTROLLER AND STEEL STRAIN POLE BASE ACCORDING TO THE FINISHED GRADE AT THAT LOCATION. ABSENT A GENERAL CONTRACTOR, THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THIS WORK. THESE LOCATIONS AND ELEVATIONS SHALL BE DETERMINED ACCORDING TO THE LAYOUT SHEETS AND THE STANDARD SHEETS IN THE PLANS. FINAL POLE LOCATIONS WILL BE STAKED BY THE ENGINEER AND ANY NECESSARY ASSISTANCE SHALL BE PROVIDED BY THE CONTRACTOR. ADDITIONAL ASSISTANCE WILL ALSO BE AVAILABLE FROM THE DIVISION OF TRAFFIC IN THE CENTRAL OFFICE. PAYMENT FOR THIS WORK SHALL BE INCIDENTAL TO THE COST OF THE PROJECT.

THE CONTRACTOR SHALL USE ALL POSSIBLE CARE IN EXCAVATING ON THIS PROJECT SO AS NOT TO DISTURB ANY EXISTING UTILITIES WHETHER SHOWN ON THE PLANS OR NOT SHOWN ON THE PLANS. ELEVATIONS AND LOCATIONS OF EXISTING UTILITIES ARE APPROXIMATE ONLY. ANY UTILITIES DISTURBED OR DAMAGED BY THE CONTRACTOR THROUGH CARELESSNESS DURING HIS CONSTRUCTION SHALL BE REPLACED BY THE CONTRACTOR AT NO EXTRA COST TO THE DEPARTMENT.

MATERIALS

GENERAL

ALL MATERIALS SHALL BE APPROVED PRIOR TO BEING UTILIZED. THE CONTRACTOR SHALL SUBMIT, FOR APPROVAL, FIVE (5) COPIES OF DESCRIPTIVE LITERATURE, DRAWINGS AND ANY REQUESTED DESIGN DATA FOR THE MATERIALS HE PROPOSES TO USE. AFTER APPROVAL, NO SUBSTITUTIONS OF ANY APPROVED MATERIALS MAY BE MADE WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER.

WIRE

ALL WIRE AND CABLE SHALL BE PLAINLY MARKED IN ACCORDANCE WITH THE PROVISIONS OF THE NATIONAL ELECTRICAL CODE. GROUNDING CONDUCTORS SHALL BE COPPER OF THE SIZES INDICATED IN THE NATIONAL ELECTRICAL CODE UNLESS OTHERWISE SPECIFIED. SERVICE ENTRANCE CONDUCTORS INSTALLED ON THE SERVICE POLE(S) SHALL BE COPPER OF THE SIZE AND WITH THE INSULATION SPECIFIED BY THE NATIONAL ELECTRICAL CODE FOR SERVICE ENTRANCE CONDUCTORS.

ALL SIGNAL CABLES SHALL BE #14 AWG, STRANDED, WITH THE NUMBER OF CONDUCTORS INDICATED, AND SHALL CONFORM TO IMSA 19-1-1984.

ALL LOOP WIRE SHALL BE #14 AWG IMSA SPEC 51-7.

ALL LOOP LEAD-IN CABLE SHALL BE #14 AWG STRANDED, PAIRED CONDUCTORS, ELECTRICALLY SHIELDED AND CONFORMING TO IMSA 19-2-1984.

ALL OTHER WIRE SHALL BE SINGLE CONDUCTOR TYPE RHW OR THW WITH SIZES LARGER THAN #12 AWG BEING STRANDED AND SHALL BE STAMPED SUNLIGHT RESISTANT.

CONDUIT

CONDUIT FOR ALL TRAFFIC SIGNALS SHALL BE RIGID STEEL. ALL RIGID STEEL CONDUIT SHALL BE GALVANIZED INSIDE AND OUT AND SHALL CONFORM TO THE UNDERWRITERS' LABORATORIES REQUIREMENTS FOR RIGID METALLIC CONDUIT.

CONCRETE

ALL CONCRETE SHALL BE CLASS A, CONFORMING TO THE REQUIREMENTS OF THE KENTUCKY STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.

GROUND RODS

ALL GROUND RODS SHALL BE COMPOSITE SHAFTS CONSISTING OF A PURE COPPER EXTERIOR WHICH HAS BEEN INSEPARABLY MOLTEN WELDED TO A STEEL CORE. THE RODS SHALL HAVE A MINIMUM DIAMETER OF ½INCH AND A MINIMUM LENGTH OF 8 FEET. THE RODS SHALL BE EQUIPPED WITH COPPER OR BRONZE CLAMPS. ALL GROUND RODS SHALL HAVE A MINIMUM DISTANCE OF 6 FEET BETWEEN THEM.

WOOD POLES

ALL WOOD POLES SHALL BE CLASS 4 CONFORMING TO THE REQUIREMENTS OF ANSI AND THE KENTUCKY STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION. THE POLES SHALL BE PENTACHLOROPHENOL TREATED IN ACCORDANCE WITH AWPA P-9 WITH HYDROCARBON SOLVENT, TYPE A.

SPAN AND MESSENGER WIRE

ALL SPAN WIRE, GUY WIRE, MESSENGER WIRE AND TETHER WIRE SHALL CONSIST OF HIGH-STRENGTH STEEL 'CLASS A' ZINC COATED EXTRA GALVANIZED PER ASTM 475-62T.

ANCHOR RODS

ALL ANCHOR RODS, UNLESS OTHERWISE SPECIFIED SHALL BE 7 FEET MINIMUM LENGTH, .05 INCHES MINIMUM DIAMETER, AND SHALL BE OF DOUBLE-EYE DESIGN.

ANCHORS

ALL ANCHORS, EXCEPT ROCK ANCHORS, SHALL BE OF THE EXPANDABLE TYPE, WITH A MINIMUM AREA OF .94 SQUARE INCHES AND SPREAD UNDER UNDISTURBED EARTH.

CONSTRUCTION METHODS

WIRING

ALL WIRING SHALL CONFORM TO THE PROVISIONS OF THE NATIONAL ELECTRCAL CODE UNLESS OTHERWISE SHOWN ON THE PLANS. WHERE MORE THAN ONE CIRCUIT IS INSTALLED WITHIN THE SAME CONDUIT, PERMANENT CIRCUIT IDENTIFICATION NUMBERS SHALL BE AFFIXED TO THE WIRES. ALL WIRES SHALL BE PERMANENTLY LABELED WITHIN 6 INCHES OF THE INPUT FILE.

CONDUIT INSTALLATION

RIGID STEEL CONDUIT ENCASEMENT SHALL BE PROVIDED FOR ALL CONDUCTORS EXCEPT FOR OVERHEAD INSTALLATIONS, WHERE CONDUCTORS ARE RUN INSIDE POLES OR CABINETS AND INDUCTION LOOP CONDUCTORS SEALED WITHIN PAVEMENTS. ALL CONDUIT INSTALLATIONS SHALL CONFORM TO THE PROVISIONS OF THE NATIONAL ELECTRICAL CODE EXCEPT WHERE DIRECTED OTHERWISE. BONDED SLIP JOINTS WILL BE PERMITTED FOR JOINING RIGID CONDUIT TO JUNCTION BOXES. WHERE A STANDARD COUPLING CANNOT BE USED, AN APPROVED THREADED UNION COUPLING SHALL BE USED. ALL CONDUIT ENDS SHALL BE REAMED TO REMOVE BURRS AND SHARP EDGES. DAMAGED PORTIONS OF THE GALVANIZED SURFACES AND UNTREATED THREADS RESULTING FROM FIELD CUTS SHALL BE PAINTED WITH A RUST INHIBITIVE PAINT. CONDUIT BENDS SHALL HAVE A RADIUS OF NOT LESS THAN 12 TIMES THE NOMINAL DIAMETER OF THE CONDUIT, UNLESS OTHERWISE SHOWN ON THE PLANS.

CONDUIT WHICH WILL NOT BE SUBJECTED TO REGULAR PRESSURE FROM TRAFFIC SHALL BE LAID TO A DEPTH OF NOT LESS THAN 18 INCHES. ON TRANSVERSE CROSSINGS UNDER ROADWAY SURFACES AND SHOULDERS, THE CONDUIT SHALL BE PLACED AT A DEPTH OF NOT LESS THAN 24 INCHES BELOW GRADE. THE CONTRACTOR WILL NOT BE PERMITTED TO CUT ANY PAVEMENT IN CARRYING OUT THIS WORK. ALL PAVEMENT CROSSINGS SHALL BE MADE BY PLACING CONDUIT IN THE SUBGRADE PRIOR TO PAVING OR BY JACKING OR BORING UNDER EXISTING PAVEMENTS. AFTER THE CONDUIT HAS BEEN INSTALLED AND BEFORE BACKFILLING IS STARTED, THE CONDUIT INSTALLATION SHALL BE INSPECTED AND APPROVED BY THE ENGINEER.

IN BACKFILLING TRENCHES, THE BACKFILL MATERIAL SHALL BE PLACED AND COMPACTED IN LIFTS OF 9 INCHES OR LESS. ANY AREA DISTURBED AS A RESULT OF THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED TO THE SATISFACTION OF THE ENGINEER. CONDUITS, JUNCTION BOXES, METAL POLES AND CONTROL BOXES THROUGHOUT THE SIGNAL SYSTEM SHALL BE BONDED TOGETHER AND BONDED TO ALL GROUND RODS BY USING GROUNDING BUSHINGS ON THE CONDUIT ENDS. THESE CONDUITS SHALL BE BONDED TO THE ELECTRICAL SYSTEM GROUND.

SPLICING

ALL UNDERGROUND SPLICES SHALL BE MADE WITH BUTT SPLICES. BUTT SPLICES SHALL BE COPPER AND OF THE CORRECT WIRE RANGE. ALL BUTT SPLICES SHALL BE COVERED WITH A 3M MASTIC PAD OR APPROVED EQUAL AND THEN TAPED WITH A 3M BRAND #33 ELECTRICAL TAPE. MASTIC PAD MUST COVER AT LEAST 3 INCHES PAST EACH END OF BUTT SPLICE. UNDERGROUND SPLICES INCLUDE SPLICES IN JUNCTION BOXES, POLE BASES AND PEDESTAL BASES. OVERHEAD SPLICES FOR SIGNAL HEADS SHALL BE MADE WITH WIRE NUTS OF THE CORRECT SIZE. WIRE NUTS SHALL THEN BE DOUBLE WRAPPED WITH 3M BRAND #33 ELECTRICAL TAPE AND POINTED STRAIGHT UP IN THE AIR TO ALLOW WATER TO RUN OFF. TAPE SHALL EXTEND AT LEAST 3 INCHES BELOW WIRE NUT. EACH CONDUCTOR, INCLUDING THE GROUND, SHALL BE ENCASED IN A SEPARATE SPLICE KIT. COST OF THIS ITEM SHALL BE INCIDENTAL TO THE PROJECT.

PAINTING

UNGALVANIZED OF DAMAGED SURFACES OF EXPOSED JUNCTION BOXES, PULL BOXES, ETC. SHALL BE GIVEN ONE COAT OF PRIMER, AND TWO COATS OF ALUMINUM PAINT AFTER THE INSTALLATION IS COMPLETED. FOR ITEMS FABRICATED FROM GALVANIZED OR NON-FERROUS ALLOYS WHICH ARE INHERENTLY RUST RESISTANT, PAINTING IS REQUIRED ONLY ON DAMAGED SURFACES.

LOOP LEAD-IN

LOOP LEAD-IN WIRE, EXCLUSIVE OF SHIELDED CABLE, SHALL BE TWISTED WITH THREE TO FIVE TURNS PER FOOT BEFORE PLACEMENT IN SAW SLOT. CONDUIT OR JUNCTION BOX. UNSHIELDED LOOP WIRING TO FIELD TERMINAL CONNECTIONS OF CABINET, AND UNSHIELDED LOOP WIRING IN LOOP AMPLIFIER CONNECTOR HARNESS SHALL ALSO BE TWISTED THREE TO FIVE TURNS PER FOOT.

LOOPS

LOOPS SHALL BE EXTENDED SPLICE-FREE TO THE CONTROLLER, POLE OR JUNCTION BOX. LOOP WIRES SHOWN AS EXTENDED TO POLES OR JUNCTION BOXES SHALL BE SPLICED INTO LOOP LEAD-IN CABLE AT THE BOXES OR POLES. LOOP LEAD-IN CABLE SHALL BE EXTENDED SPLICE-FREE FROM POLE OR JUNCTION BOX TO CONTROLLER. SPLICES SHALL CONFORM TO ABOVE NOTE AND BE PLACED TO MINIMIZE POSSIBILITY OF WATER INTRUSION. FOR ALL PROJECTS INVOLVING NEW ASPHALT PAVEMENT, TRAFFIC LOOPS SHALL BE INSTALLED IN THE BASE COURSE OF ASPHALT PAVEMENT JUST BEFORE FINAL SURFACE IS CONSTRUCTED. THE ELECTRICAL CONTRACTOR SHALL COORDINATE THE INSTALLATION OF TRAFFIC LOOPS WITH THE PAVING CONTRACTOR AND THE RESIDENT ENGINEER.

LOOP SEALANT

CONTRARY TO SECTION 835.06 OF THE CURRENT EDITION OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION THE HARDNESS (INDENTATION) SPECIFICATION FOR TRAFFIC LOOP ENCAPSULANT SHALL BE 35 - 65 (SHORE A).

ACCEPTANCE REQUIREMENTS

AFTER THE INSTALLATION(S) IS COMPLETED AND AT SUCH TIME AS THE ENGINEER SHALL DIRECT, THE CONTRACTOR SHALL CONDUCT AN OPERATION TEST FOR APPROVAL. THE TEST SHALL DEMONSTRATE THAT THE SYSTEM OPERATES IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. INDUCTION LOOP CONDUCTORS SHALL TEST FREE OF SHORTS AND UNAUTHORIZED GROUNDS AND SHALL HAVE AN INSULATING RESISTANCE OF AT LEAST ONE HUNDRED MEGOHMS WHEN TESTED WITH A 500 VOLT DIRECT CURRENT POTENTIAL IN A REASONABLY DRY ATMOSPHERE BETWEEN CONDUCTORS AND GROUND.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY AND ALL ELECTRICAL INSPECTIONS, MEMBERSHIP, METER BASE AND ANY OTHER REQUIREMENTS BY THE UTILITIES SERVING THE INSTALLATION AND PAY ALL FEES REQUIRED.

WIRE COLOR CODE

5 - CONDUCTOR
THREE SECTION HEADS

SIGNAL	COLOR
RED	RED
YELLOW	ORANGE
GREEN	GREEN
NEUTRAL	WHITE
NOT USED	BLACK

5 - CONDUCTOR
PEDESTRIAN SIGNALS

SIGNAL	COLOR
ML WALK	GREEN
ML D/W	RED
SS WALK	BLACK
SS D/W	ORANGE
NEUTRAL	WHITE

5 - CONDUCTOR
PEDESTRIAN BUTTONS

SIGNAL	COLOR
ML BUTTON	GREEN
ML BUTTON	RED
SS BUTTON	BLACK
SS BUTTON	ORANGE
NOT USED	WHITE

5 - CONDUCTOR
PED SIGNAL AND BUTTON

SIGNAL	COLOR
WALK	GREEN
D/W	RED
BUTTON	BLACK
BUTTON	ORANGE
NEUTRAL	WHITE

7 - CONDUCTOR
FIVE SECTION HEADS

SIGNAL	COLOR
RED	RED
THRU YELLOW	ORANGE
LT YELLOW	BLUE
THRU GREEN	GREEN
LT GREEN	BLACK
NEUTRAL	WHITE
NOT USED	WHITE/TRACER

ML - Main Line
SS - Side Street

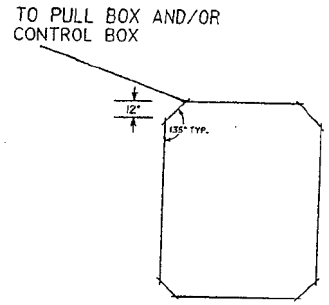
REV 3/2002

(2)

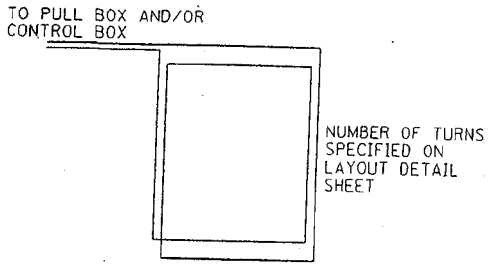
SIGNAL NOTES

COUNTY OF	ITEM NO.	SHEET NO.
McCRACKEN	T 3	

LOOP LEAD-IN WIRES SHALL BE TWISTED WITH THREE TO FIVE TURNS PER FOOT UNTIL TERMINATED AT FIELD CONNECTIONS IN THE CABINET OR CONNECTED TO SHIELDED CABLE.

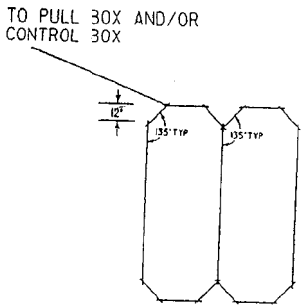


SAW CUT DIAGRAM

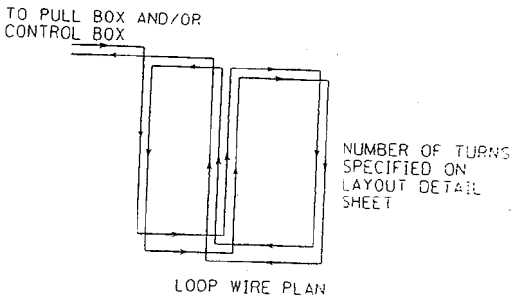


LOOP WIRE PLAN

LOOP LEAD-IN WIRES SHALL BE TWISTED WITH THREE TO FIVE TURNS PER FOOT UNTIL TERMINATED AT FIELD CONNECTIONS IN THE CABINET OR CONNECTED TO SHIELDED CABLE.

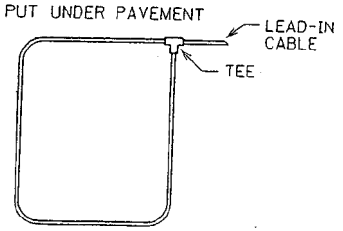


SAW CUT DIAGRAM

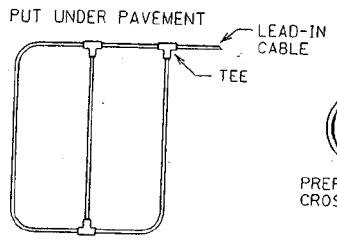


LOOP WIRE PLAN

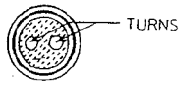
PREFORMED LOOPS SHALL BE CONSTRUCTED WITH 3/8" HEAVY DUTY REINFORCED RUBBER HOSE(CLASS A OIL RESISANT). THE TEE SHALL BE CONSTRUCTED OF HEAVY DUTY HIGH TEMPERATURE SYNTHETIC RUBBER. STANDARD WIRE SHALL BE WATER RATED #16 THWN.



PREFORMED LOOP DIAGRAM



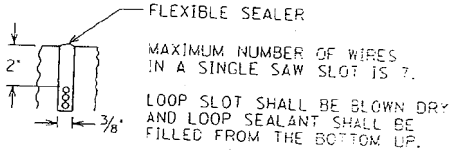
PREFORMED LOOP DIAGRAM

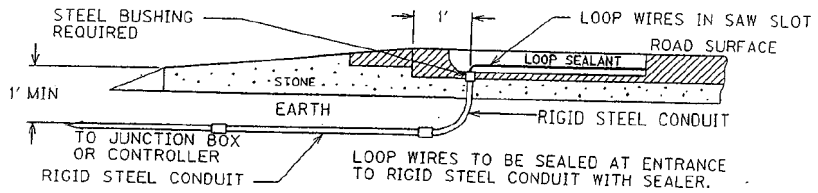


PREFORMED LOOP CROSS SECTION

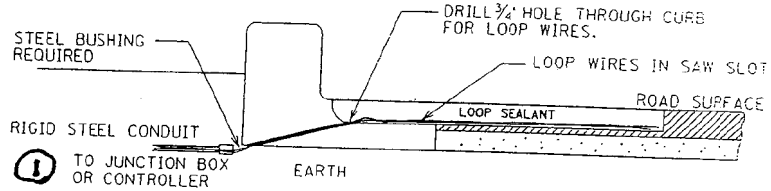
NOTE:

FOR ALL PROJECTS INVOLVING NEW ASPHALT PAVEMENT, TRAFFIC LOOPS SHALL BE INSTALLED IN THE BASE COURSE OF ASPHALT PAVEMENT JUST BEFORE FINAL SURFACE IS CONSTRUCTED. THE ELECTRICAL CONTRACTOR SHALL COORDINATE THE INSTALLATION OF TRAFFIC LOOPS WITH THE PAVING CONTRACTOR AND THE RESIDENT ENGINEER.





LOOP WIRE TRANSITION - FLAT SHOULDER



LOOP WIRE TRANSITION - CONCRETE CURB

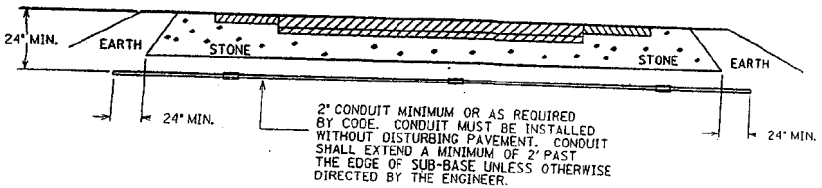
REV. 5/2002

LOOP DETAIL

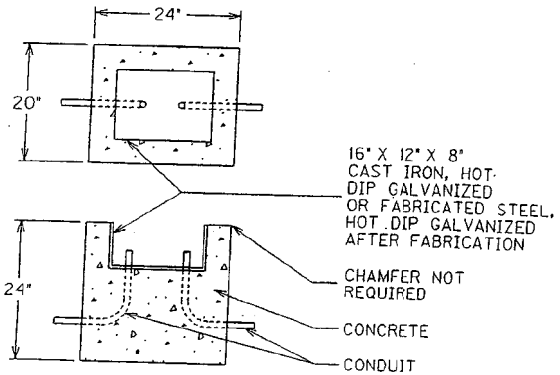
APPROVED BY

DATE

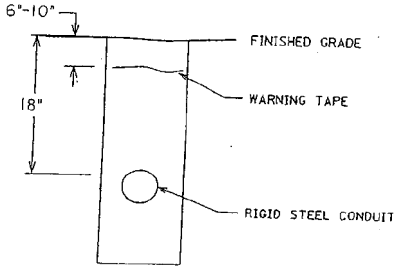
(1) THE DEPARTMENT WILL CONNECT THE LOOP WIRE TO THE JUNCTION BOX



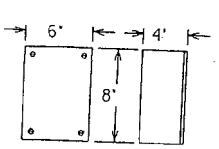
CONDUIT UNDER EXISTING PAVEMENT DETAIL



JUNCTION BOX DETAIL

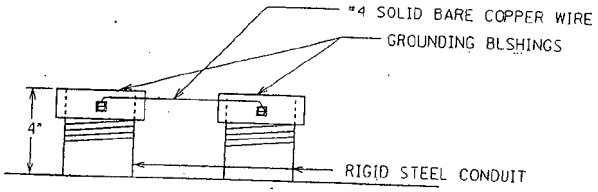


DEPTH OF CONDUIT



SPLICE BOX SHALL BE FABRICATED FROM MINIMUM 12 GAUGE STEEL AND GALVANIZED AFTER FABRICATION. BOXES SHALL HAVE NO KNOCKOUTS AND SHALL BE PROVIDED WITH A PLATE COVER WITH A WEATHER RESISTANT GASKET AND A MINIMUM OF FOUR SCREWS FOR ATTACHING THE PLATE COVER TO THE BOX. CABLE CLAMPS SHALL BE PROVIDED FOR CABLES ENTERING AND EXITING THE BOX.

SPLICE BOX (TYPICAL)

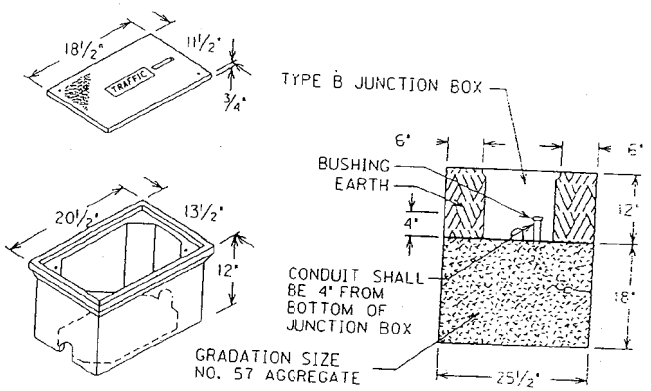


TYPICAL GROUNDING DETAIL

CONTRACTOR SHALL INSTALL UNDERGROUND UTILITY WARNING TAPE IMMEDIATELY ABOVE THE CIRCUIT CABLES AS SHOWN. THE TAPE SHALL CONFORM WITH THE APWA-ULCC NATIONAL COLOR CODE WITH BLACK LETTERING ON RED. THE TAPE SHALL CONTINUOUSLY READ 'CAUTION: ELECTRIC LINE BURIED BELOW' ALTERNATING WITH A NO DIGGING SYMBOL. IT SHALL BE DURABLE AND COLORFAST TO WITHSTAND YEARS OF UNDERGROUND BURIAL AND EASILY DIRECT BURIED.

THE TAPE SHALL BE 6 INCHES WIDE AND 7.0 MILS (NOMINAL) THICK. IT SHALL HAVE A MINIMUM TENSILE STRENGTH OF 600# PER 6 INCH WIDTH. IT SHALL BE COLOR CODE IMPREGNATED WITH ALKALI AND ACID STABLE, LEAD-FREE, ORGANIC PIGMENTS SUITABLE FOR DIRECT BURIAL. IT SHALL BE ULTRAVIOLET COLORFAST ALSO. THE TAPE SHALL BE NONDISTORTING WITH NO ELONGATION.

UNDERGROUND UTILITY WARNING TAPE



JUNCTION BOXES SHALL BE CONSTRUCTED OF A FIBERGLASS REINFORCED POLYMER CONCRETE. QUAZITE PC STYLE OR APPROVED EQUAL. COVERS SHALL BE MARKED "TRAFFIC" AND BE ATTACHED WITH ⅜" STAINLESS HEX BOLTS. JUNCTION BOXES SHALL BE INSTALLED FLUSH WITH FINISHED GRADE.

JUNCTION BOX TYPE B

For this project all underground splices shall be made with butt splices Butt splices shall be copper and of the correct wire range. All butt splices shall be covered with a 3M Mastic Pad or approved equal and then taped with a 3M brand #33 electrical tape. Mastic pad must cover at least 3 inches past each end of butt splice. Underground splices include splices in junction boxes, pole bases, and pedestal bases. Overhead splices for signal heads shall be made with wire nuts of the correct size. Wire nuts shall then be double wrapped with 3M brand #33 electrical tape and pointed straight up in the air to allow water to run off. Tape shall extend at least 3 inches below wire nut. Each conductor, including the ground, shall be encased in a separate splice kit. Cost of this item shall be incidental to the project. The splicing specification listed here takes precedence over any other splicing specifications whether shown on plans or in the Standard Specifications for Road and Bridge Construction.

SPLICING REQUIREMENTS

APPROVED BY | DATE

REV. 6/2002

JUNCTION BOX/CONDUIT DETAILS

TRANSPORTATION CABINET
Department of Highways
FRANKFORT, KY 40622

Sheet No: 1

MCCRACKEN COUNTY
FD04 073 0045 007-009

PCN: 03-0787
Letting: 12/12/2003

THE BIDDER MUST MAKE THE EXTENSIONS AND ADDITIONS
SHOWING TOTAL AMOUNT BID USING FIGURES ONLY

Item No.	Code No.	Item	Approximate Quantity	Unit	Unit Price Dollars	Amount Dollars
1	2677	ASPH PAVE MILLING & TEXTURING	**2,807.00**	TON	.	.
2	7595	PCCP/24-4" NON-REINF	**12,756.00**	SQYD	.	.
		PAVE STRIPING-PERM PAINT-4 IN (DELETED: 1-13-04)			.	.
3	6510	PAVE STRIPING-TEMP PAINT-4 IN	**11,150.00**	LIN FT	.	.
		PAVEMENT MARKER TYPE V-BY (DELETED: 1-13-04)			.	.
4	9171	PREFORMED QUADRAPOLE LOOPS (HOME RUN LEAD IN)	**950.00**	LIN FT	.	.
5	2014	BARRICADE-TYPE III (REVISED: 1-13-04)	**12.00**	EACH	.	.
6	2562	SIGNS	**600.00**	SQ FT	.	.
7	2775	FLASHING ARROW	**4.00**	EACH	.	.
8	2650	MAINTAIN AND CONTROL TRAFFIC	**1.00**	LP SUM	.	.
9	6554	PAVE STRIPING-DUR TY 1-4 IN W (ADDED: 1-13-04)	**7,400.00**	LIN FT	.	.
10	6555	PAVE STRIPING-DUR TY 1-4 IN Y (ADDED: 1-13-04)	**3,750.00**	LIN FT	.	.
11	2676	MOBILIZATION FOR MILL & TEXT	**1.00**	LP SUM	.	.
12	2569	DEMOBILIZATION	**1.00**	LP SUM	.	.
13		**TOTAL BID**				$.